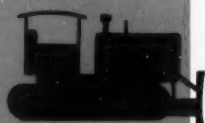


COAL MINING

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• If they were painted black, Allis-Chalmers Tractors would still be preferred by mine operators.

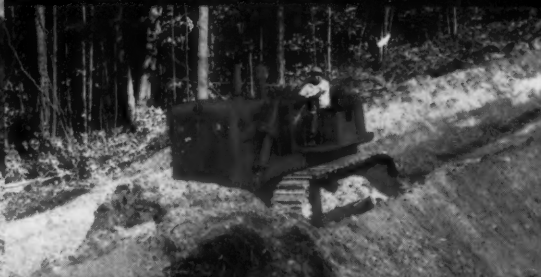
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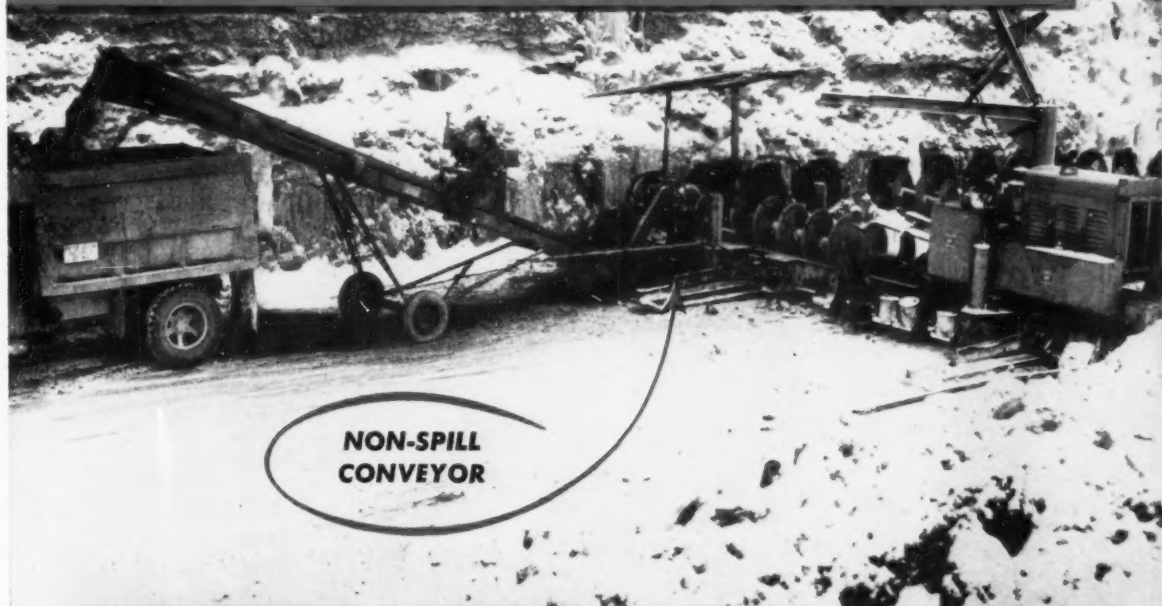
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Twelve different models of McCarthy Coal Recovery Drills mine this low-cost "bonus coal." Auger diameter ranges

from 16 in. to 42 in.; auger sections are 6 ft., 12 ft., or 24 ft. long.

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Contact your nearest Salem Tool Co. distributor, or write for Bulletins M-101 and M-102 for detailed information on the complete line of McCarthy Coal Recovery Drills.

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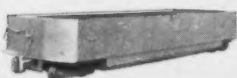
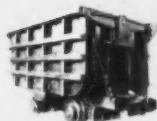
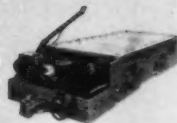
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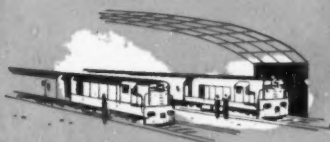
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COAL MINING

Volume XXXIII October, 1956 No. 10

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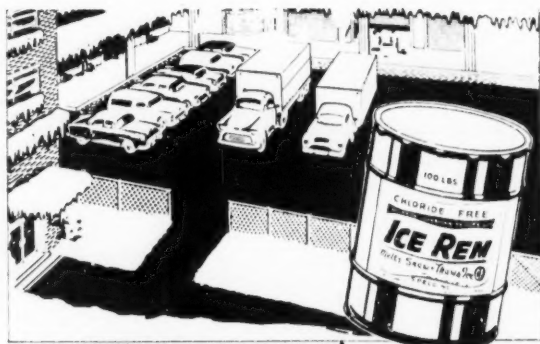
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Do You Know?

Tests of a cleaning technique used to extract coal from waste materials, saving thousands of dollars for the coal industry, the U. S. Bureau of Mines reported.

Using the process, technicians in Washington State and Alaska are salvaging hundreds of tons of waste coal for market. A Roslyn, Wash., coal company, encouraged by the test results at the Bureau of Mines' pilot plant in Seattle, is recovering more than \$3,000 worth of marketable coal every month from washery refuse. A mine at Healy River, Alaska, is now yielding 500 tons of coal a day from a bed that was formerly discarded during stripping.

The technique, called the dense-medium process, uses a suspension of fine particles of magnetite or other heavy solids in water to separate valuable bits of coal from dirt, rock and shale. Heavy wastes sink to the bottom of a separating bath while the lighter pieces of coal float at the top.

The Bureau of Mines tests at its Northwest Experiment Station in Seattle give the first detailed data on the technique's performance on waste materials. The dense-medium process has been used for several years to clean raw coal as it comes from the mines.

Chief purpose of the tests was to discover whether dense-medium cleaning could cut mounting coal losses at preparation plants, Bureau researchers said.

Army Signal Corps supplies the world over will be managed by a giant electronic brain that went into operation at the Army Signal Supply Agency.

The electronic supply clerk collects and memorizes 8,000,000 different facts on more than 150,000 different electronic items required to keep the Army's global communication-electronics systems in operation.

In addition, the device is capable of making 37,500 changes to these facts per day; uses the facts to process 6,000 orders for supplies received daily; and remembers all orders received when stocks are available and fills the orders when stocks are received.

At the dedication ceremony, Frank H. Higgins, assistant secretary of the Army (Logistics), said that "this high speed electronic data processing installation is an important step forward in streamlining procedures to meet the logistical requirements of the Army".

The computer was designed for the Signal Corps by the International Business Machines Corporation.

Automation may prove a boon to workers so disabled they cannot operate heavy machinery or perform other jobs requiring physical strength. Their technical ability, however, might be developed so that they could operate increasingly complex machinery that required little or no physical strength.

Research on the problem will be undertaken by the Human Resources Corporation of New York with the aid of a \$60,313 grant from the U. S. Office of Vocational Rehabilitation announced today.

Blind farmers, both farm owners and

Here and There in the Coal Industry

The Pocahontas Operators Association held its annual Fall meeting today at The Greenbrier in White Sulphur Springs. NCA's Executive Vice President Tom Pickett was a speaker, discussing Legislation affecting coal that may be expected to be considered by the next Congress.

* * *

George C. Trevorow has been appointed safety director of the Bituminous Coal Operators Association. He succeeds Marling J. Ankeny, who resigned to become director of the U. S. Bureau of Mines. Mr. Trevorow, a graduate of Penn State College, was connected with companies in Western Pennsylvania for a number of years.

* * *

Harlan County Coal Operators' Association of Harlan, Ky., will hold its annual meeting on Nov. 2. An announcement by Secretary George S. Ward said the following members have been appointed as a committee to nominate officers for the coming year: R. C. Scott, Ed Taylor, C. S. Guthrie, Kenes Bowling, and Louis H. Green.

tenants, will be rehabilitated, along with their farms, in another Federally aided program sponsored by the Alabama Institute for the Deaf and Blind.

In California still another Federally aided rehabilitation project calls for establishment of a half-way house to give a home to men discharged from the state mental hospital and who are gradually returning to work situations. The half-way house is expected to help them make the change from hospital to normal living again.

Grants totalling \$540,923 for 19 such research and demonstration projects in rehabilitation were awarded.

In an emergency with a patient bleeding seriously it is sometimes impossible to get enough of the right kind of blood for transfusion. How to meet some of these situations safely with the wrong blood was reported by Dr. Ernest Witebsky of Buffalo at the meeting here of the International Society of Blood Transfusion with the American Association of Blood Banks.

The following changes have been announced recently by The Jeffrey Mfg. Co., Columbus, Ohio:

Russell W. Knode, formerly Export Manager, promoted to Manager of Field Offices, Mining Division. Knode has been with the company twenty years, ten in Export.

John R. Jeffrey replaces Knode as Export Manager. He was formerly Sales Engineer, Special Products Division. Jeffrey is a graduate of Washington and Lee University and was recently chosen National 2nd Vice-President of the Society for the Advancement of Management. He has been with Jeffrey nine years.

* * *

Edna Coal Co. of Denver has signed a \$6 million contract to supply a planned new power plant of the Colorado-Ute Electric Association at Nucla, Colo. L. M. Cooley, managing partner of Edna, said a new mine will be opened near Nucla to provide the approximately 1,400,000 tons of coal to be delivered to the REA cop between 1958 and 1972. The site was chosen, he said, after geologists uncovered new fields and high grade bituminous coal, much of which can be recovered through strip mining.

For the patient with the relatively uncommon AB blood group, it is theoretically possible to give blood of any group if it were not for the presence in the donor's blood of incompatible isoagglutinins. These substances which can clump the patient's red cells can be eliminated by titration of the donor's serum or by adding blood group specific substances or both.

In the case of men and boys who are Rh negative, and who have not previously had transfusions, Dr. Witebsky and associates have given as much as 10 to 20 pints of Rh positive blood before or during operations without any bad results. They do not do this over a longer period than three days but do not hesitate to give any amount of blood needed in that time.

The patient might eventually develop antibodies to the Rh positive blood. Dr. Witebsky pointed out, however, that it is better to have a living patient likely to develop Rh antibodies than "an unsensitized one who could not be saved because of lack of blood."

Big output is built in

Individual Design

We believe that the right way to build an excavator is to match every part—from boom point to treads—to the specific rated capacity of the machine. At Bucyrus-Erie and Beckwith Machinery Company we call this Individual Design.

Here's what it means

Individual Design means striking the right balance between power, weight and speed for sustained high output at low cost over a long period of time. Bucyrus-Erie excavators match engine to dipper size so there's no waste of power; deck machinery components are not overloaded or underworked; boom strength and weight are right for the dipper size. There's never any overdipping or underpowering.

This older model Bucyrus-Erie 22-B with Caterpillar D318 Engine was purchased by the Frantz Construction Company of Uniontown, Pa. in 1951. It has been used in both stripping and construction work and is shown here working on coal operation in Somerset County.

Here's how it pays off

This kind of design keeps Bucyrus-Erie excavators out front in production, with all parts working in smooth, efficient coordination. It keeps them on the job year after year with minimum down time and maintenance—there is no excess wear and tear on moving parts.

Individual Design is a big reason why Bucyrus-Erie excavators are still working profitably when others have lost their usefulness.

Your stripping and loading operations can use this kind of money-making performance so get the full details from your nearest Beckwith location. We've got all the facts on Bucyrus-Erie excavators from the 10B to the 88-B.



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Consider the 22-B for Example

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Exceptional synchronization of speeds and power results in well-balanced crowd and hoist, and concentrates maximum digging force at the dipper teeth.

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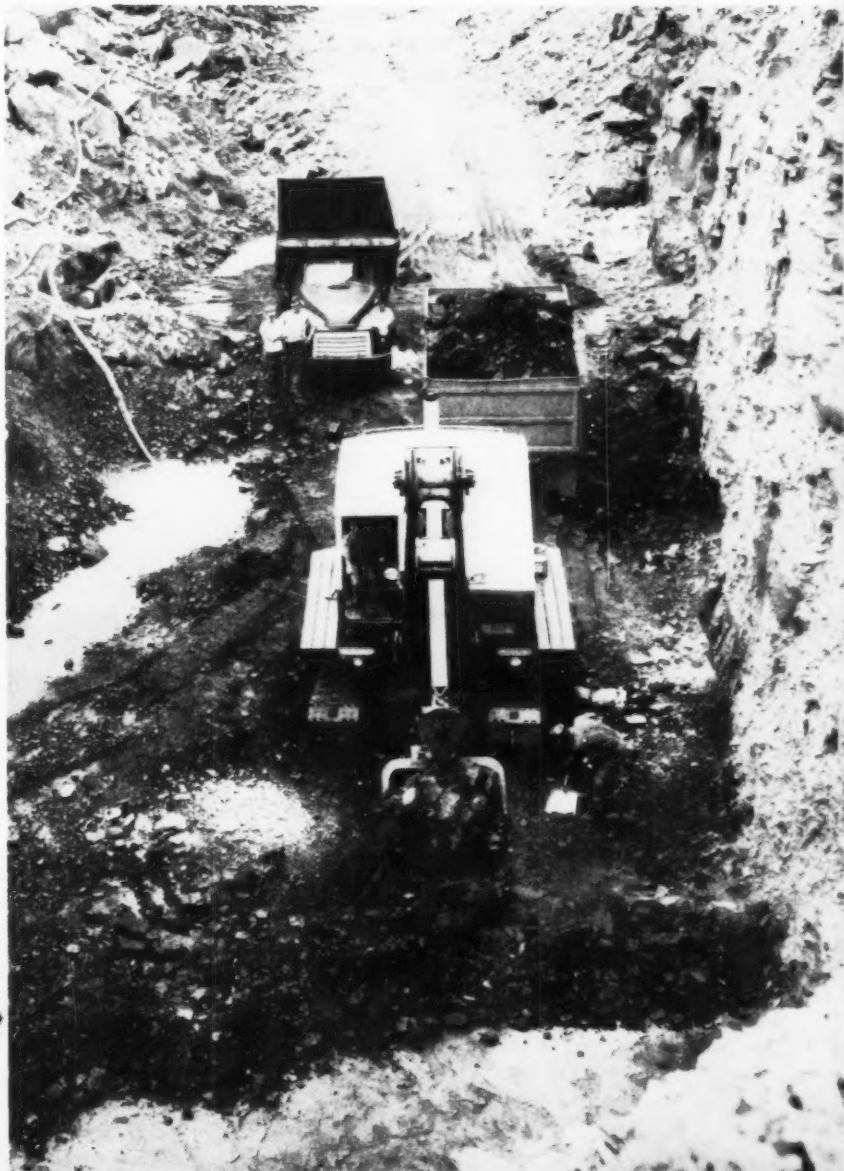
EXCEPTIONAL STABILITY

Big track-type mounting provides large bearing area that means exceptionally stable, solid working foundation.

POWER

Power transmitted direct to point of action . . . fewer parts . . . less friction . . . less inertia . . . less lost motion . . . minimum power loss.

This 22-B working in the pit was purchased in 1955 by the Zacherl Coal Company of Oil City, Pa., and is powered by a dependable Caterpillar D318 Diesel Engine.



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NEW AND LARGER TRACTORS SPEED UP OPERATIONS AT THE LOTZ COAL COMPANY

•



In order to help move higher overburden and to speed up other tractor operations at its two strip pits near Enon Valley, Pennsylvania, the Lotz Coal Company of New Palestine, Ohio, has added two new Caterpillar D-9 tractors to work with its two Lime Model 1201 Draglines.

Showing the Lima Dragline depositing spoil for the new Caterpillar Tractor push over the spoil bank, in the No. 2 pit.



Lima Dragline stripping
at the No. 1 pits.



Caterpillar D-9 tractor back-leveilling spoil at the No. 1 pits.

Close up of the Tractor
pushing spoil.





How to ESTABLISH a YEAR-END BONUS PLAN

Year-end bonus plans are being adopted by more and more firms. Here's a plan that

will help you get the most from your bonus plan and will save you money taxwise.

By JACK E. BEDFORD

Coal mining management, using a year-end bonus as a part of their executive compensation plan, finds it has many advantages—and drawbacks. A bonus plan will save tax dollars, increase employee loyalty, reduce absenteeism, cost some money, and take time to compute each year.

Increases Executive Loyalty

Coal mining executives who are compensated in part by a bonus plan develop a more loyal spirit. They have a stronger feeling of belonging to the profit team of the mine. The year-end bonus makes these people feel they were in part responsible for the profits of the business. They will put forth extra effort to keep profits up and the bonus payments

coming in each year in the future.

In addition to this type of loyalty, a year-end bonus plan will improve your firm's prestige in your community and in the industry. You will have plenty of applicants for any executive positions that do develop in your organization. People like to work for a firm that divides its profits with its employees.

Reduce Income Taxes

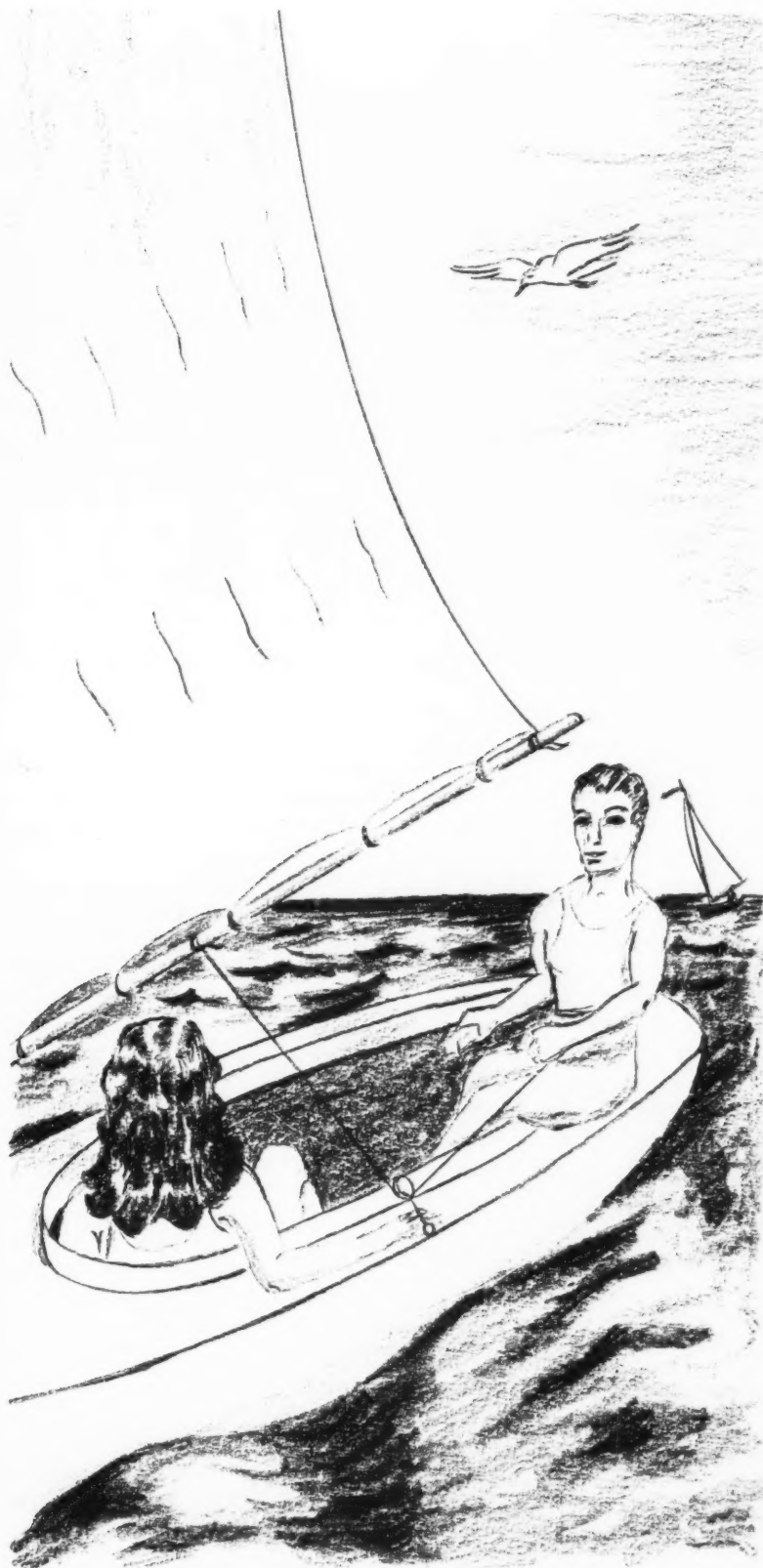
Coal mines realize an income tax saving when they have a year-end bonus plan. Naturally, your income tax payments are not reduced by the amount of your bonus payments. But, your taxable income is reduced dollar-for-dollar by the amount of your year-end bonus payments.

Based on the corporate income tax rate, your bonus payments cost you (out-of-pocket expense) 48 cents for every dollar of bonus you pay your executives . . . an inexpensive way to improve morale and strengthen loyalty of your executive team.

Base Bonus On Merit

Santa Claus is fine on Christmas, but most people do not expect him every day of the year. And, if you pay your year-end bonus as a gift, it will not accomplish as much as possible in building loyalty and increasing production. Then, too, a gift is not a tax deduction like a bonus based on merit is according to the Internal Revenue Bureau.

As a general rule, you will find



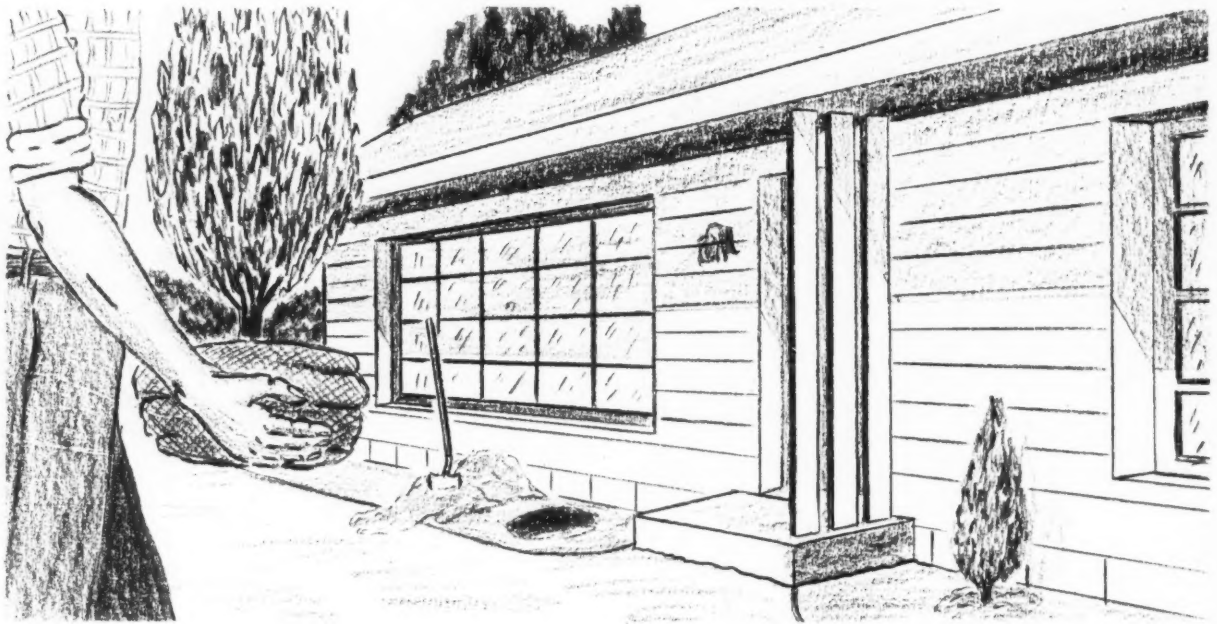
that a year-end bonus is appreciated more if it is awarded on the basis of merit. Your employees will work harder and be more loyal if they feel they earn the year-end bonus you give them.

Some coal mine managements base the year-end bonus payments on the basis of results. This method has much to recommend it from an executive development standpoint and taxwise. However, the practical limitations of establishing exact result figures for various people on the executive level is obvious. There is no yardstick to measure results of a top management team on an individual basis.

Another plan is to base the bonus on the length of service for the individual involved. For instance, if the total time of 5 executive level employees totals 25 years service, the bonus would be paid on the basis of 4% of the total bonus for each year of employment. If total employment time was 200 years, the share of the bonus would be one-half of one per cent per year per man. This system has much to recommend it. It puts extra emphasis on executive loyalty and tends to reduce labor turnover in your organization.

Still another plan of allocating the year-end bonus to the management team is to base it on the annual income of all people involved. The total payroll of the group is divided into each man's annual earnings. This provides a percentage figure to be used in dividing the year-end bonus for each member of the management team.

Other factors may be worked into the allocation of the year-end bonus plan. For instance, you may want to include a provision for encouraging new executives. You may want to give extra bonus payments for outstanding accomplishments of certain individuals. Or, you may want to reward your loyal men with extra payments. All of these, and other profit factors, can be worked into a coal mine's year-end bonus plan.



Avoid Tax Pitfalls

Taxwise there are two things to keep in mind about your coal mine's year-end bonus plan:

1. It must be "reasonable"
2. It must not be a disguised dividend.

There is no exact mathematical formula for computing the "reasonable" requirement of the year-end bonus. According to the Internal Revenue Bureau, a bonus is "reasonable" if it is what would be paid under similar circumstances by similar firms for similar services.

As a general rule, the Internal Revenue Bureau interprets "reasonableness" by the skill or training required to perform the job, the amount of responsibility demanded on the job, the profit earned as a result of the work, and the future prospects of the individual and the management of the coal mine.

Another area often investigated by the Internal Revenue Bureau on year-end bonus payments is to minor children. When the year-end bonus payment to a minor child is out of line with the responsibility, skill and profit contribution of the child; the amount of the year-end bonus may be disallowed by the Commissioner.

This, of course, will increase your income taxes.

Part number 2 of the requirements for a year-end bonus plan covers the "disguised dividend" aspect. This provision hits bonus payments to stockholding employees of the coal mine the hardest, but should be checked carefully by all involved.

When a bonus paid to an employee bears a close relationship to his holdings in the company, the Internal Revenue Bureau may disallow part or all of the year-end bonus paid. Even though there is no relationship between the holdings of the stockholding employee and his year-end bonus, part of the payment may be disallowed.

To be on the safe side, you should base your year-end bonus payments on: skill, training, responsibility, working conditions, profit contribution, and future prospects of the management man and the coal mine's business.

Pay Bonus With Showmanship

This, of course, does not mean that you should hire a brass band when you present your men their year-end bonus payments. But, a little quiet showmanship will make the key men feel that they are ac-

tually getting something over and above their regular salary as a bonus.

One company, for instance, gives its year-end bonus payments in the form of certified checks. This makes the transaction seem more legal to the men and makes the payment more impressive.

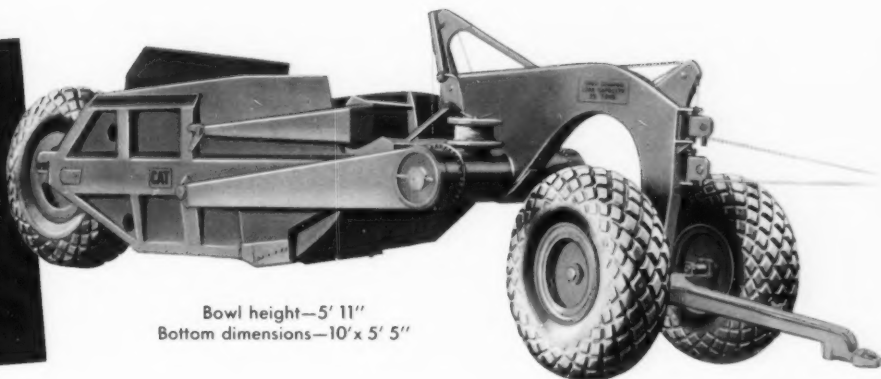
Another firm always passes out its bonus checks in private. This provides an opportunity for the top executive to add a few personal words of "thanks" to the cash bonus he gives to his key employees. And, it tends to keep the amount of the bonus on a more confidential basis in the organization.

Contrast these ideas with a bonus that is included in the regular salary check. The man knows there is a bonus, but it takes a little figuring to arrive at the amount that is extra. And, with income tax and other deductions, the amount of the year-end bonus is not as impressive as when it is paid in a separate check.

Year-end bonus plans do not cost as much as you might think. And, when the long-term benefits of better employee relations is considered, the expense is changed to an investment in the future success of your coal mine.

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WITH...**

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NO. 90
SCRAPER**

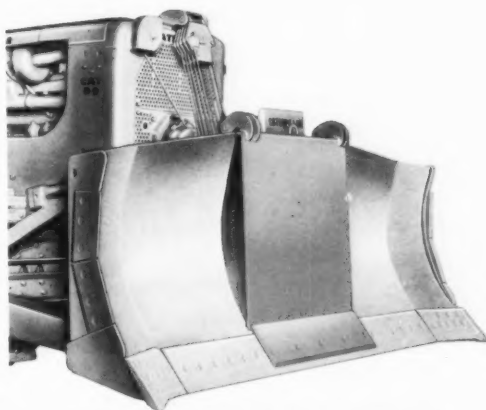


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No. 90—matched scraper companion for the big D9. Largest scraper in the Caterpillar line, its heaped capacity with sideboards is 31 cu. yd. The No. 90 is designed from cutting edge to ejector to get the largest load in the shortest time. Incoming material fills every corner of the bowl, boiling action puts bonus yards in the Cat No. 90 Scraper. Low center of gravity lets the scraper operate with safety anywhere the tractor can go. No clumsy overhead structures—the No. 90 is easy to top load. Positive ejector forces out sticky mud, sand or boulders. Tires track inside cut; cutting edge stays level.

You'll find the Cat No. 90 Scraper a real profit-making teammate for your D9. It is designed to match the D9's speed and power—to meet high production schedules—to load and haul more yards in fewer man and machine hours.

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Shorten Job Work Cycles...

WITH D9 MATCHED EQUIPMENT



You've seen the mighty D9 in action for considerably more than a year, and you've watched it set new records for moving dirt, pushing big loads, cutting work cycles, boosting profits. Now, the D9 is breaking its own production records! With 320 HP (Flywheel) to call on... with choice of torque converter or direct drive and exclusive Cat oil clutch... with weight and traction and easy handling, here's *real* money-making work power!

And to take advantage of this giant power... to help you get even more from the D9, your Caterpillar Dealer proudly presents heavy-duty tools designed specifically to match the brute strength of the Cat D9 Tractor! Equipment sold, guaranteed, serviced under one roof... one responsibility... by your Caterpillar Dealer! We invite you to get all the facts on this money-making equipment at our headquarters... today!

**RIP...
DOZE...
PUSH...**

with finger-tip control for high-speed operation and more profitable cycles!

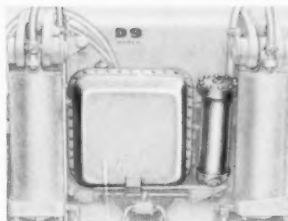
CATERPILLAR



Heavy-duty tools keep both ends of D9 busy—earning money!

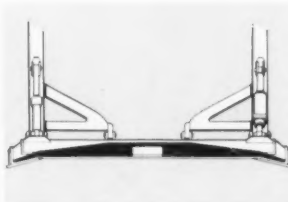
NO. 50 HYDRAULIC CONTROL

Heavy-duty, constant-power pump and control unit with two independent circuits for operating both rear-mounted ripper and hydraulic tilt cylinder at the same time.



NO. 9 RIPPER

Brand new Caterpillar-built Ripper designed specifically for the D9. Integrally mounted, it brings new speed, new maneuverability, and new efficiency to ripping operations. Ruggedly built to loosen packed clay, rock, shale, roots . . . can often turn shot and shovel jobs into scraper jobs. Balances dozer weight for better traction, easier handling.

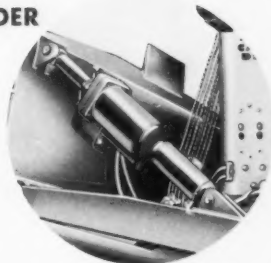


LOAD-SHAPE DOZER

Designed to get and retain a bigger load faster and easier. Angled ends of Cat No. 9S Dozer roll dirt toward center, keeping a large load on the blade. In many soil types the Load-Shape Dozer can push 15 cu. yd., making longer hauls more practical. Replaceable end bits and cutting edge. Front or rear cable controlled. No. 9A Angling Bulldozer also available.

HYDRAULIC TILT CYLINDER FOR NO. 9S BLADE

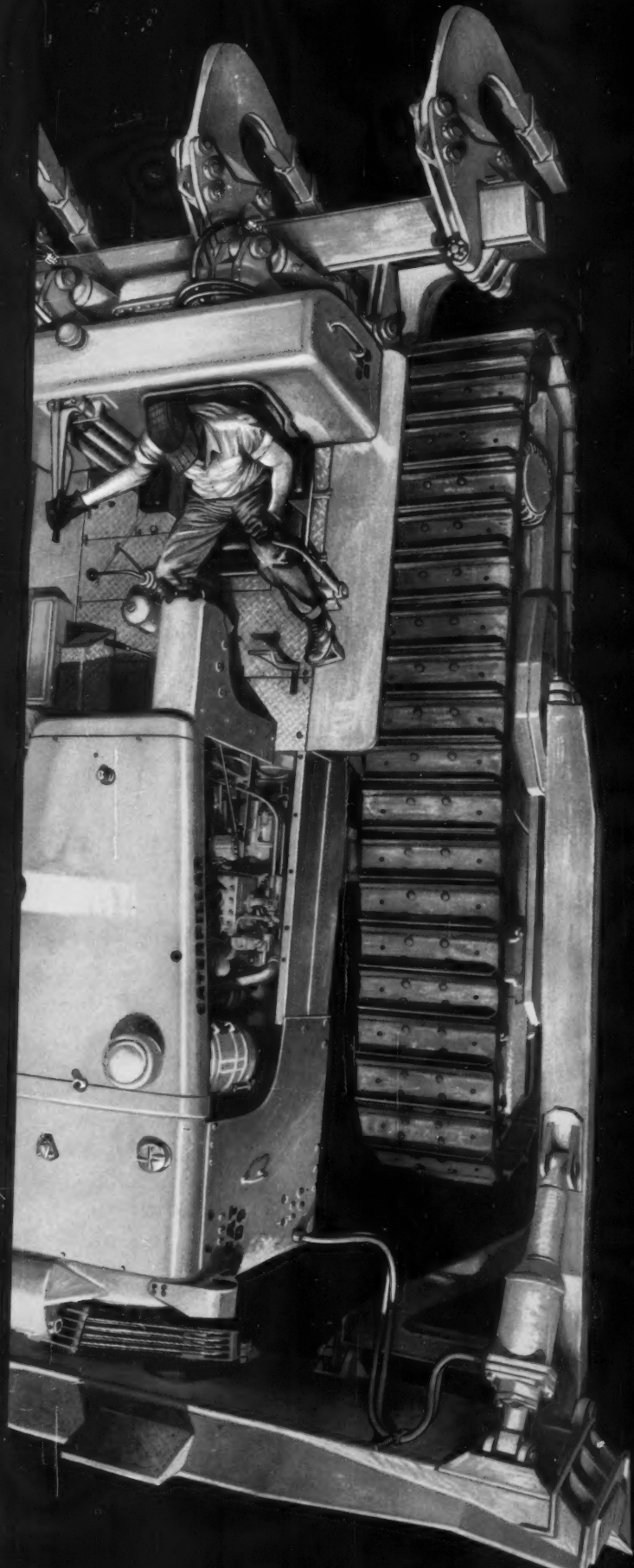
Hydraulic Tilt Cylinder raises or lowers either corner of bulldozer blade a maximum of 37". Controlled by lever at operator's side. Speeds ditching, digging rocks, stump removal, pioneering roads on hillsides. Can be operated simultaneously with ripper or other types of hydraulic controlled equipment.



20' U-DOZER

For efficiently moving and leveling larger loads of lightweight, free-flowing materials. Built by Balderson, Inc.; available at Caterpillar Dealers. 20' long, 5' high. Handles up to 30 cu. yd.





Watched
Equipment

for the
D9

presented by your
CATERPILLAR
DEALER

New Controls For Caterpillar No. 12 Grader

A new automatic blade control made exclusively for Caterpillar No. 12 Motor Graders and which keeps the grader blade at any desired slope regardless of unevenness of the terrain, has been developed by Preco Incorporated, Los Angeles. The attachment is in production and limited shipments are being made to Caterpillar Dealers.

The Preco Automatic Blade Control, according to its manufacturers, has demonstrated its accuracy in controlling slopes to within $\frac{1}{8}$ inch in 10 feet. It is claimed that an operator can finish a given

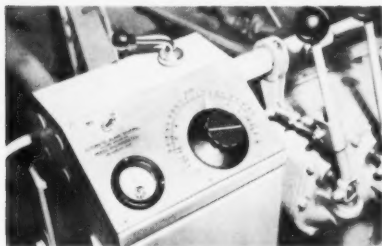
grade in a single pass at higher speed and with extreme accuracy, when conditions enable the blade to carry all the surplus material. The required time for finishing on highway grading jobs has been reduced by at least one-half as compared with manual control of the grader.

When a motor grader is equipped with the Preco Automatic Blade Control the operator merely selects the desired slope on a dial located conveniently to the other controls. The dial is calibrated in both per cent of slope and slope ratio. The operator raises or lowers the blade as required to control the depth of

cut, but the slope will remain as selected, regardless of how the grader frame may be affected by surface conditions.

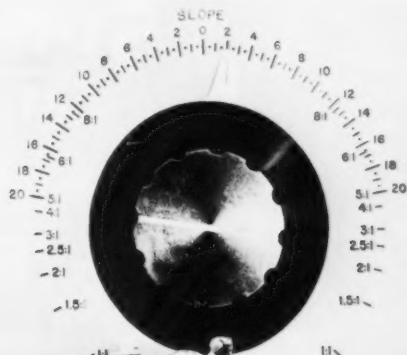
Any horizontal blade angle needed for normal grading work can be used by the operator, and slope position will be held to indicate setting by the automatic control. Inside and outside ditch slopes, as well as road surface slopes, can therefore be finished to the ratio desired.

The automatic control can be overridden by the operator, or shut off to permit manual operation. It is powered by the standard battery, and installation is simple.



Controls of the new Preco automatic blade leveler for Cat Motor Graders are simple to operate. They can be overridden or shut off by the operator at any time.

The new Preco automatic leveler keeps the grader blade at any desired slope regardless of unevenness of the terrain. Accuracy in controlling slopes of $\frac{1}{8}$ inch in ten feet has been demonstrated.





Thirsty guests helped themselves to bottled beverages.

Annual Summer Outing of the Central Pennsylvania Open Pit Mining Association

Music was played while the guests ate clams.





Left: Tim McCarthy, Clearfield Bituminous coal Co.; C. H. Chaitz, guest; Ray S. Walker, Bradford Coal Co.; Bill Chapman, Traffic Mgr., P. R. R.



Left: Walter Calder, Beckwith Machinery Co.; Ray H. Lutz, Lutz Coal Co.; Geo. Shinchok, Pennbrook Coal Co.; Bob Knopp, Chest Coal Co.

The annual summer outing of the Pennsylvania Open Pit Mining Association was at the Cooper Picnic Grounds on route 53 between Kylertown and Snow Shoe, Pa., on August 22nd.

The outing started at 10 A. M., with golf at the Philipsburg Country Club. Activities at the picnic grounds started at 3 P. M., with the serving of steamed and raw clams and bottled refreshments, the later until closing time. About 800 members and guests attended this year's outing.

Officers of the Association this year are as follows:

OFFICERS — 1955 - 56

President
B. M. DUBOIS
Clearfield

Treasurer
HERMAN S. MOORE
Philipsburg

Executive Secretary
G. ALBERT STEWART
Clearfield

Vice President
ROBERT BAILEY
Morrisdale

Secretary
RAY S. WALKER
Bigler

Counsel
FRANK A. WHITSETT
Clearfield

DAVID P. REESE
Harrisburg

DIRECTORS

(In addition to above officers)

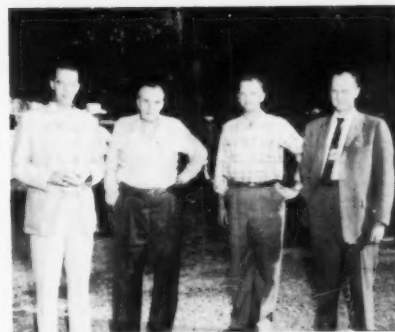
Robert Bailey
Wm. E. Crum
R. S. Walker
Thomas J. Minns
Arthur Rydberg

Earl M. Brown
B. M. DuBois
Rembrandt Woolridge
Lewis Stein
O. T. Shingledecker

Benson Lingle
Ralph Kuhns
R. S. Carlin
Joseph Warquier
Clair V. Fink



Thomas K. Yoke and Niel Briuing, Thompson Coal Co.; C. E. Johnson and Charles Francis, Cherry Run Coal Co.



Left: Jake Haveman, Allegheny Machinery Co.; John Pushnok and Owner and Andy Stossel, Supt., Arcadia Coal Co.; L. T. Peterson, Allegheny Machinery Co.



At the Speakers' Table: T. C. Higgins, U. S. Bureau of Mines; M. F. Yonko, Gen. Mgr., Powhatan Mining Co.; H. J. Dusz, Chief, Ohio President of the Mining Electro-Mechanical Maintenance Association.

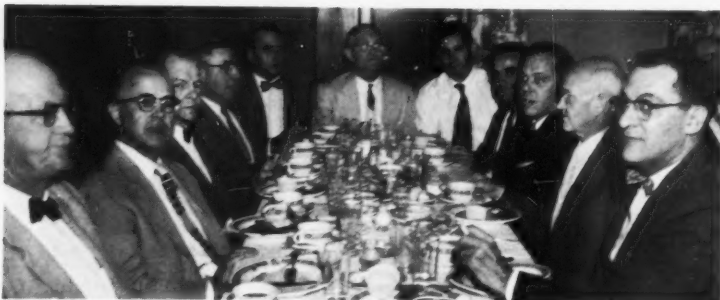


Left: Clyde Gibson, Robert Rovenizer, Harold Sample, John Ruffini, all with the Hanna Coal Co.

Annual Banquet of the Ohio Valley Branch of the **Mining Electro-Mechanical Maintenance Association**



Andrew Millarcik, Supt., Columbia Southern Chemical Co.; William Luke., Production Foreman, Powhatan Mine No. 3; Frank Hanasky, Safety Director, Powhatan Mining Co.



Left: W. B. Craver, V-Pres., and H. A. Levely, Sales Eng., Kanawha Mfg. Co.; C. M. Kerker, F. C. Sachs, F. E. Anderson, R. A. Thompson, M. P. Ryan, Ed. Braun, R. J. Hunter, all with the Valley Camp Coal Co.; R. T. Smith, Representative for Kennametal, Inc.; D. S. Cunningham, Valley Camp Coal Co.

Man's present stage of automation is the inevitable result of his curiosity.

Our present shortage of engineers and scientists is due primarily to the unprecedented growth of America and to the low birth rate in the 1930s.

Our engineering and scientific shortage problem will be solved in the traditional American process of responsible persons doing their own thinking and acting to meet the situation at hand.

Speaking before members of Ohio Valley Branch of The Mining Electro-Mechanical Maintenance Association at the Belmont Hills Country Club, St. Clairsville, Ohio, Mr. Henry Schmidt, President, North American Coal Corporation brought out the importance of keeping the wheels revolving in our present mechanical mining age. He said without appropriate maintenance our mechanical world would come to a halt. More than 300 tickets were sold for this banquet. About 275 persons attended.



At Speakers' Table: Left, J. D. Reilly, V-Pres. Hanna Coal Co.; Emery Shaw, Supt., Lorain Coal & Dock Co.; Pete Prior, Supt., Valley Camp Coal Co.



Left: Karl Merrick, Supt., Merrick Coal Co.; Chas S. Winters, Supt., Powhatan Mining Co.; Bob Edgar, Watt Wheel & Car Corp.



Left: Chas. Dusch, Ray and Frank Tallman, Larry Schmitt, all of Warwood; John Tedzeh, H. J. Miller, M. Gretchin, all with Windsor Power House Coal Co.; Frank E. Shepherd, David Z. Norton Co.; Chas. Sampson, G. E. Electric Co.; Joseph Karpiel, Saginaw Coal & Terminal Co.; Don. McKee, Ashland Oil & Refining Co.; C. G. Van Home, Saginaw Coal & Terminal Co.



Mr. Henry Schmidt addressing the banquet.



This is The Board of Directors of the Branch this year. They are, left to right, back row: M. J. Mechling, Valley Camp Coal Co.; A. F. Meger, Hanna Coal Co.; A. M. Newcome and Micheal Duda Front row: H. J. Miller, Windsor Power House Coal Co.; J. N. Wheeldon, Hulburt Oil & Grease Co.; R. E. Ferry, Westinghouse Corp.; R. M. Wilson, Manufacturers' Rep.

Long Life Facts!

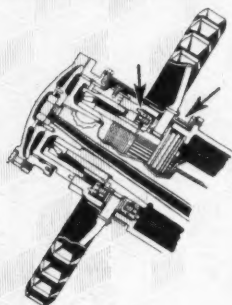


**PERFECTLY
SEALED FOR
5600 YEARS**

WHEN OPENED, ANCIENT
EGYPTIAN TOMB SEALED SINCE
3700 B.C. REVEALED PARAOH
CHEOPS REMARKABLY WELL
PRESERVED.

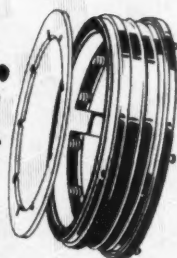
**LUBRICANT
SEALED IN...
DIRT OUT...**

NEOPRENE BELLOWS SEALS
GIVE NEARLY PERFECT PRO-
TECTION FOR FINAL DRIVES ON
CATERPILLAR TRACK-TYPE TRACTORS.
TRACTOR LIFE IS GREATLY LENGTHENED--
DIRT, GRIT AND WATER ARE EXCLUDED WHILE
LUBRICANT IS SEALED IN.



**CAT BELLOWS SEALS
THINK FOR THEMSELVES**

BELLOWS SEALS ARE SELF-ALIGNING
TO COMPENSATE FOR WEAR OR
MISALIGNMENT. FLEXIBLE, SPRING-
LOADED BELLOWS PRESS CORK
RING AGAINST A SMOOTH STEEL
SEALING SURFACE FOR A PERFECT
CLOSURE. RESULT? LONGER TRACTOR LIFE!



REMEMBER ONLY YOUR CATERPILLAR DEALER
OFFERS YOU GENUINE LONG LIFE CATERPILLAR PARTS

BECKWITH MACHINERY COMPANY

6550 HAMILTON AVENUE, PITTSBURGH, PA.

OLD TOWN RD. CLEARFIELD, PA.	E. BROADWAY FARRELL, PA.	1356 E. 12th ST. ERIE, PA.	361-369 CONGRESS ST. BRADFORD, PA.
BUCKHANNON PIKE, W. VA., ROUTE 20 (SO.)		CLARKSBURG, WEST VIRGINIA	



Built-in transistor amplifier in Motorola's new "POWER VOICE" speaker for two-way mobile radios provides up to ten times greater audio output. Unit is easily removed from inside mounting bracket and hung on vehicle window to enable remote monitoring.

The first mobile communications type speaker with a built-in transistor amplifier has been announced by Motorola. The "POWER VOICE" speaker provides up to ten times the audio output of standard passive speakers in mobile two way radio installations.

The speaker element has a band-pass frequency response tailored specifically for mobile service. It accents voice frequencies but suppresses ignition noise and other interference above and below the basic voice frequency range.

The transistor amplifier utilizes two Motorola power transistors and has a flat response from 300 to 3000 cps. The 3.2 ohm input impedance is compatible with most communications type receivers. Battery drain is very low, being less than 0.3 ampere on standby and 1.0 ampere with full voice output.

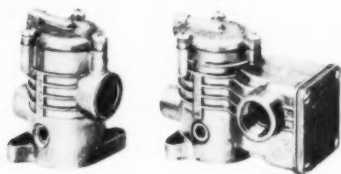
Approximately 1 watt input to the amplifier provides 15 watts output in 12 volt vehicles and 5 watts output in 6 volt vehicles. Speaker output is varied with the usual receiver volume control by controlling the input to the transistor amplifier.

Hardware for firewall or under dash mounting is included. An optional kit is available for mounting on the steering column. The unit is

(Continued on Page 23)

easily removed from its mounting bracket and hung outside the vehicle window to enable monitoring of received messages from a considerable distance away. The compact steel case measures approximately $5\frac{1}{4} \times 5\frac{1}{4} \times 3\frac{1}{4}$ inches. Weight is about 6 pounds.

The "POWER VOICE" speaker is available with Motorola's TWIN-V and PRIVATE LINE radio equipment. It is also available as a separate item to replace the standard passive speaker in conventional mobile two-way radio trunk-mount installations. More information is available from Motorola Communications and Electronics, Inc., Technical Information Center, 4501 West Augusta Blvd., Chicago 51, Illinois.



Valvair small solenoid pilot valves, available with or without integral junction box.

A complete line of small solenoid pilot valves capable of handling air, vacuum, oil, water and inert gases, is announced by Valvair Corporation.

Available in both 2 and 3 way types, the new valves are designed for control of Speed King remote pilot operated valves or direct control of small cylinders and similar devices. These valves are extensively used in laboratories and on precision production equipment where accurate control and quick response are required, the manufacturer states.

Capacities range up to 23.8 cfm air and 3.8 gpm hydraulic. Valves are said to be capable of controlling over 600 cycles per minute.

The solenoid enclosure is dust and moisture proof, completely sealed to prevent the entrance of splashing liquids or airborne contaminants. Normal service life is reput-

ed to exceed 25 million cycles and solenoid coil is guaranteed against burn-out for the life of the valve. Both plunger and spring, the only moving parts, are of stainless steel. Hycar seats and O-ring seals resist oxidation and abrasive wear. Air passing around the plunger cleans and lubricates it and cools the coil.

The new valves are available with or without integral junction box. The junction box is large enough to accommodate 6-inch taped pigtail leads. Both solenoid cover and junction box cover are

fitted with captive fasteners to prevent loss. Removal of solenoid cover renders valve inoperative.

Cylinder ports are tapped $\frac{1}{4}$ -in. NPT and electrical conduit connections are tapped $\frac{1}{2}$ -in. NPT. Valves can be supplied for direct pipe connection, with sub-base, or drilled for mounting on customer's manifold. Solenoid coils are supplied for 3 to 300 volts dc, 6 to 550 volts ac and 25 to 60 cycles. According to the manufacturer, maximum solenoid coil current consumption is 10 watts. Valves are available for

(Continued on Page 24)

SCOTTDAL MACHINE, FOUNDRY & CONSTRUCTION CO.

DEPT. CM

BOX 51

SCOTTDAL, PA.

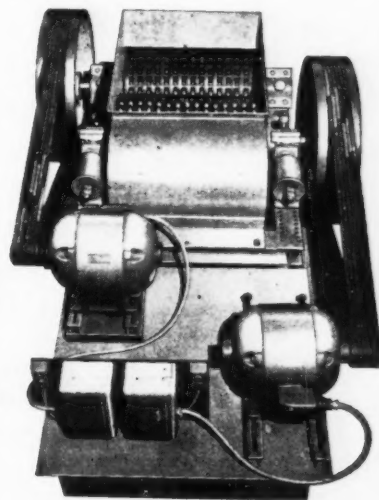
DOUBLE ROLL

COAL CRUSHER

EFFICIENT . . . produces a more uniform product!

ECONOMICAL . . . uses less power!

BOOSTS . . . sales—profits!



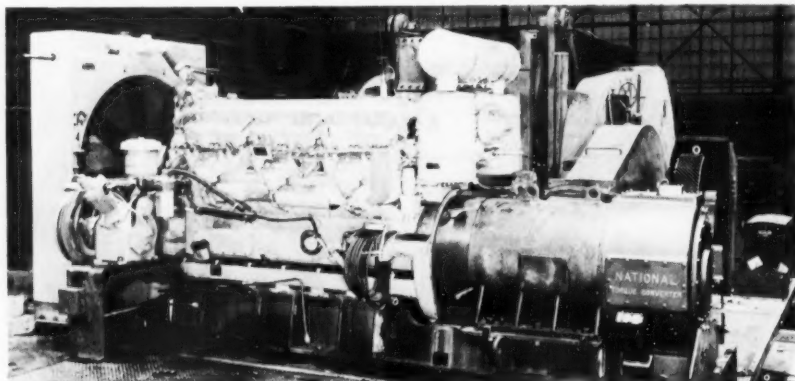
NO. 63 SPECIAL — 2 Motor Drive — Produces a Product $\frac{3}{4}$ " to 8". Equipped with Two Grooved Flywheels. (No Gears)

Efficient and practical the shredding action of the crusher's tooth studded double rolls turns out a more consistent product. Quality produced forged steel tooth gears, welded steel base, bronze bushed journal bearings, welded steel hopper and grooved flywheels.

immediate shipment from stock in principal cities or direct from the factory.

Valvair also manufactures a complete line of air, vacuum and hydraulic valves with manual, mechanical, electrical or pneumatic control.

For complete information on Valvair pilot valves, contact Valvair representatives in principal cities or write to Valvair Corporation, 454 Morgan Avenue, Akron 11, Ohio. Ask for Bulletin PB.



First National Supply Company Torque Converter for excavating service was installed on a Lima Type 2400, 6 cu. yd. shovel powered by a 12-cylinder Caterpillar diesel of 473 horsepower. The shovel has been in coal stripping service for H. E. Drummond Coal Company, Jasper, Alabama, for several months.

The National converter, near the right corner of the rotating base, has both input and output drives on the inner side. The single-stage unit multiplies torque automatically and steplessly between ratios of 1:1 and 3:1 as required, thus simplifying the operator's job and assuring fast and smooth digging operation without shock loads on machinery.

Development of the National torque Converter resulted from a need for heavy-duty, trouble-free performance in units of high power capacities in oil well drilling service. Three years of this kind of operation led to the availability of these torque converters to other industries. The National torque converter is now standard equipment on Lima Type 2400 excavators.

A method for manufacturing an evenly dyed, lightweight, flexible, flameproof fabric which retains its flameproofing after laundering and cleaning was granted patent No. 2,755,534. It is made of a cellulosic fiber - reinforced asbestos fabric. The process was invented by Irvin Barnett or Somerville, N. J., who assigned the patent rights to the Johns-Manville Corporation of New York.

Use MacWhyte Wire Rope on Your Toughest Mining Job-It's Made To Meet Your Needs!



NORTHEASTERN

and

ZANESVILLE SUPPLY COMPANIES

are also headquarters for Jeffery chain and conveyors, Diamond roller chain and sprockets, and all types and sizes of brake lining and friction material.

NORTHEASTERN SUPPLY CO.

321 CHERRY AVENUE

CANTON, OHIO

ZANESVILLE SUPPLY CO.

75 MAYSVILLE AVENUE

ZANESVILLE, OHIO

Euclid Division of General Motors Corporation has just released new literature describing the Model TS-18 Twin-Power Scraper.

The new catalog explains the twin-power principle, pioneered by Euclid in the off-the-highway field in which there are two engines of 218 h.p. each, one in the tractor and one behind the scraper bowl, each driving an axle through a separate Torqmatic Drive. A 300 h.p. engine is available in the tractor where even more horsepower is desired. The twin power trains permit efficient self-loading of this overhung engine scraper and independent operation under adverse conditions where conventional scrapers require a pusher tractor.

Action views show how hydraulic lever action of apron, bowl and ejector provides fast, independent control of all scraper operations. Only 16 feet of cable on the apron lift minimizes the costly problem of downtime from cable breakage.

Condensed specifications and a performance graph are included in the catalog to provide data on engines, transmissions, tires, scraper controls, weights and dimensions, speeds and grade ability.

Copies of the catalog, Form 552, are available from Euclid dealers or Euclid Division, General Motors Corporation, Cleveland 17, Ohio.

ICE REM-CF, a new chloride free ice and snow melting compound, is described in a 2-page bulletin issued by Speco, Inc., Cleveland.

According to the well illustrated literature, ICE REM-CF is 99.99% chemically active and contains neither calcium nor chlorides. It is claimed that it will not corrode aluminum and other metals or harm cement, concrete and asphalt.

Because its molecular structure has a greater depressing point on ice than salt, ICE REM-CF is said to have substantially more thawing capacity at lower temperatures and in the sub-zero range. It is recommended for melting ice and snow quickly on steps, walks, loading platforms, streets, airport runways, railway switches, gutters and drains.

For copies, write Speco, Inc., 7308 Associate Avenue, Cleveland 9, Ohio. Ask for LL-4069.

A series of assembly and parts photographs are advantageously used in a new 16-page, two-color Allis-Chalmers catalog (MS-1100) to illustrate the concise copy giving design, engineering and operating highlights of the company's 75 hp HD-11 Diesel powered crawler trac-

tor. The new catalog, now available from the Construction Machinery Division, Allis-Chalmers Manufacturing Co., Milwaukee, Wis., also contains specifications and a two-page spread devoted to the line of equipment matched to the HD-11 to increase its versatility and performance capabilities.

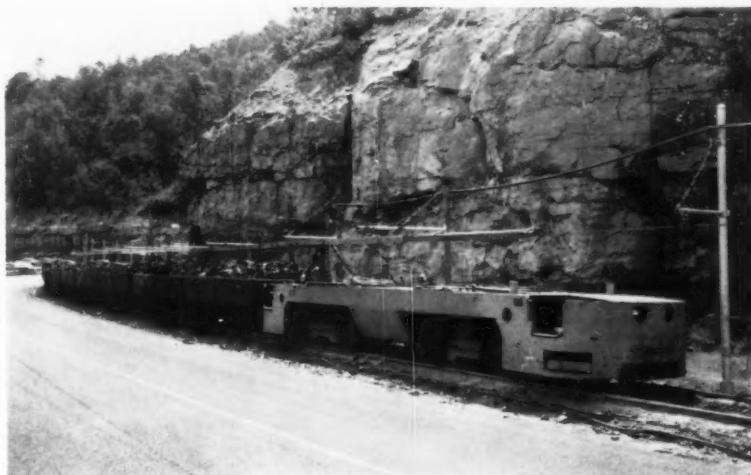
For heavy hauling you'll do better with **JEFFREY 8-wheel Trolley Locomotives**

Big coal loads can be hauled fast with Jeffrey 27, 37 or 50-ton single-unit locomotives.

Operation and maintenance are better, too. The four-wheel, equalized double trucks and the short overhang at the ends give an easy ride at high speed. The eight wheels distribute the locomotive's weight for less concentrated rail loading.

Outstanding operating and safety features include: roller-bearing type journal boxes and motor axle suspensions... air and dynamic service brakes... automatic couplers with air-operated uncoupling... trolley with air-operated retriever... separate blower for each motor.

Other features of 8-wheel locomotives and other types for mainline and secondary haulage are described in Catalog 836. For a copy, write to The Jeffrey Manufacturing Company, Columbus 16, Ohio.



JEFFREY

MINING • CONVEYING • PROCESSING EQUIPMENT
TRANSMISSION MACHINERY • CONTRACT MANUFACTURING

The Wise Old Owl Says . . .

DON'T BE FOOLED

It's the "Dollar Difference" that Counts!

WE OWN WHAT WE ADVERTISE

Buy from the largest stock of good mining equipment in America. Includes all types of Joy Cutters, Loaders, Shuttle Cars, Cat Trucks, Belt Conveyors, Chain Conveyors, etc.

JOY EQUIPMENT — rebuilt

- 3—Joy 20-BU Loaders, latest type.
- 2—Joy 14-BU Loaders, low pedestal.
- 1—Joy 14-BU Med. Pedestal Loader.
- 2—Joy 14-BU High Pedestal Loaders.
- 3—Joy 12-BU Loaders, 9E, latest type.
- 2—Joy 12-BU Loaders, 7E, excellent.
- 6—Joy 8-BU Loaders.
- 3—Joy 11-BU Loaders.
- 2—Goodman 660 Loaders on Cats, excellent.
- 1—Joy 6SC Shuttle Car, rebuilt.
- 4—Joy 8SC Shuttle Cars, lowest type.
- 1—Joy 5SC Shuttle Car, rebuilt.
- 2—Joy 32E9 Shuttle Cars.
- 2—Joy 32E10 Shuttle Cars.
- 2—Joy 32E15 Shuttle Cars.
- 1—Joy T-1 Standard Cat Truck.
- 1—Joy T-2-5 Cat Truck, AC.
- 5—Joy T-2-5 Cat Trucks, 250 volt DC.
- 1—Joy T-2-6 Cat Truck with reel.
- 4—Joy 11-B Cutting Machines, like new.
- 1—Joy 7B Cutting Machine, excellent.
- 2—Goodman 512 Cutting Machines with Bugdusters.
- 4—Goodman Machines on Cats, 31" high. All hydraulic.
- 1—Goodman 512 Cutting Machine, perfect.
- 3—Jeffrey 29-UC Cutting Machines, cat mounted, perfect.

LOCOMOTIVES

- 2—Jeffrey, 20 ton, type MH-110, 42" and 44" Ga.
- 4—Jeffrey 13 ton, type MH-110, 36", 42" and 44" Ga.
- 3—Jeffrey, 10 ton, type MH-78, 42" and 48" Ga.
- 12—Jeffrey, 6 ton, type MH-88, 42", 44" and 48" Ga.
- 3—Jeffrey, 4 ton, type MH-96, 42", 44" and 48" Ga.
- 1—G. E. 4 ton, type 825, Locomotive, 26" high.
- 10—G. E. 6 ton, types 801, 803, 821 Locomotives, 42", 44" and 48" Ga.
- 1—G. E. 8 ton, Type 822 Locomotive, 44" Ga.
- 3—G. E. 10 ton, type 809, Locomotives, 42", 44" and 48" Ga.
- 1—G. E. 10 ton, 829 Locomotive 36" Ga.
- 1—Goodman 4 ton, 8-30 Locomotive, 22" above rail.
- 8—Goodman, type 33, 6 ton, 44" and 48" Ga.
- 3—Goodman 8 ton, type 32A, 36", 44" and 48" Ga.

- 3—Westinghouse, type 902, 4 ton, 42" and 48" Ga.
- 2—Westinghouse, type 904, 6 ton, 44" and 48" Ga.
- 2—Westinghouse, type 906, 44" and 48" Ga.
- 2—Westinghouse, type 907, 10 ton, 44" and 48" Ga.
- 2—36" Ga. Battery Locomotives.

TIPPLE EQUIPMENT

- 1—Cedar Rapids portable super Screening Plant.
- 1—Allis Chalmers 5' x 14' Rippflo Vibrator.
- 1—4' x 10' Robbins Gyrex Vibrator.
- 1—4' x 14' Vibrator, three deck, low head.
- Feeders, Drag Conveyors, and Loading Booms.

CUTTING MACHINES

- 3—Jeffrey 29-UC Universals on Cats.
- 2—Goodman 212-G-3, AC, low vein.
- 4—Baby Goodman 212's, rebuilt.
- 3—Goodman 312's, 18" high.
- 2—Goodman 412's, 18" high.
- 2—Goodman 512's with Bugdusters, like new.
- 15—Goodman 12AA's and 112AA's.
- 10—Goodman 324 Slabbers.
- 2—Goodman 724 Slabbers.
- 30—Jeffrey 35L's, like new, 17" high.
- 15—Jeffrey 35B's and 35BB's.
- 2—Jeffrey 29B's on track.
- 2—Jeffrey 29C's, track mounted.
- 2—Sullivan CR-10's, 15" high.

LOADING MACHINES

- 17—Joy Loaders, all types.
- 2—Jeffrey 61 CLR's on rubber, 26".
- 3—Jeffrey L-500 Loaders.
- 2—Myers Whaley No. 3 Automat Loaders.
- 3—Clarkson Loaders, 26" above rail.

CONVEYORS

- 2—Joy 30" Belt Conveyors, 10 to 15 H. P.
- 2—Goodman 97-C's, 26".
- 3000' 30" Conveyor Belt.
- 8—Jeffrey 61 AM Room Conveyor, 300 ft.
- 10—Jeffrey 61 HG Face Conveyors.
- 2—61EW Elevating Conveyors.
- 2—61WH, 15" Room Conveyors, 300 ft.
- 4—Joy Ladel UN-17 Shakers.
- 10—Goodman G-12½ and G-15 Shakers.

CONVERTERS AND DIESEL PLANTS

- 1—50KW G. E. TC-6, 275 volt, Rotary Converter.
- 3—100 KW G. E. TCC-6's, 275 volt, Rotary Converters.
- 1—150KW G. E. HCC-6's, 275 volt, Rotary Converters.
- 1—200KW G. E. HCC-6 Rotary Converter, 275 DC.
- 3—300 KW G. E. HCC-6 Rotary Converters, 275 DC.
- 1—200KW Westinghouse Rotary Converter, 275 DC.
- 1—300KW Westinghouse Rotary Converters, 275 DC.
- (All above with 6900/13000 and-Or 2300/4000 primary transformers).
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